

R E P O R T

FROM THE

SELECT COMMITTEE

ON

CONNAUGHT LAKES;

WITH THE

MINUTES OF EVIDENCE.

Ordered, by The House of Commons, to be Printed,
3 July 1835.

Martis, 2^e die Junii, 1835.

Ordered, THAT a Select Committee be appointed to inquire into the Practicability and Public Advantage of making a Navigable INLAND COMMUNICATION between *Geesey and Castlebar*, through the Lakes *Corrib, Mask, and Carra*; between *Westport and Castlebar*, through Lake *Rakies*; and between *Ballina and Castlebar*, through the Lakes *Cann and Collin*.

And a Committee was appointed, of—

Mr. Dominick Browne.	Lord Viscount Clements.
Mr. Cooper.	Mr. Ewart.
Mr. French.	Mr. Martin (of Sligo.)
Mr. Bodkin.	Lord Stanley.
Sir William Brabazon.	Mr. O'Connell.
Mr. Perceval.	Sir Frederick Trench.
The O'Connor Don.	Mr. Smith O'Brien.
Mr. Martin (of Galway.)	Lord Viscount Milton.
Mr. Lynch.	Mr. Harcourt.
Mr. Blake.	Earl of Kerry.
Mr. Chancellor of the Exchequer.	Lord Viscount Morpeth.
Sir Robert Peel.	Mr. Ormsby Gore.

Ordered, THAT the Committee have power to send for Persons, Papers and Records.

Ordered, THAT FIVE be the Quorum of the Committee.

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R E P O R T.

THE SELECT COMMITTEE appointed to inquire into the Practicability and Public Advantage of making a Navigable INLAND COMMUNICATION between *Galway* and *Castlebar*, through the Lakes *Corrib*, *Mask*, and *Carra*; between *Westport* and *Castlebar*, through Lake *Rakies*; and between *Ballina* and *Castlebar*, through the Lakes *Conn* and *Cullin*; and who were empowered to report their Observations thereupon to The House, together with the MINUTES OF THE EVIDENCE taken before them;—HAVE agreed to the following REPORT.

YOUR COMMITTEE, believing that but little is accurately known of the Lakes of Galway and Mayo, have considered it best to confine their Examination to the only Witnesses who have any scientific knowledge of their Levels and Navigation. Your Committee consider the Map which they have directed Mr. Bald, the Engineer, to construct, and which is annexed to this Report, the best *prima facie* evidence of the practicability of the Navigation of these Lakes.

These Navigations may be divided into four parts:

1. From the Sea at Galway to Lough Corrib, Loughs Mask and Carra.
2. From the Sea at Ballina to Loughs Conn and Cullin.
3. From the Sea at Westport to the Lakes at Castlebar.
4. The Union of these three before-mentioned Navigations.

Detached Navigations already exist:

No.	Miles	
1. From the Town of Galway to Lough Corrib	3	
2. In Lough Corrib	22	& 12 Miles West.
3. In Lough Musk	9	
and Lough Carra	-	6 Miles East.
4. Along Ayle River	7	
5. In Castlebar, or Rahin's Lakes	7	
6. Along Turlough River	5½	
7. In Loughs Cullin and Conn	11	
8. Detached parts of the Moy, from Lough Cullin to Ballina, about	-	5 Miles.
Direct Navigation	64½	23 Branch Navigation.

To unite these detached Navigations, the *First* in importance is from the Sea to the North of the Town of Galway. This Canal has been laid out by the late Mr. Nimmo, and is now under consideration by the Board of Works of Ireland; its length is about the third of a mile: 354. A 2 this

this may be the junction of the proposed extension of the Grand Canal from Ballinasloe to the Sea. The next is from Lough Corrib to Lough Mask, a distance of $2\frac{1}{2}$ miles, with a difference of level of 36 feet.

These two complete the *First Part* of the Proposed Navigations.

The *Second Part* is from the Sea to Lough Conn, a distance of $3\frac{1}{2}$ miles, with a difference of level of 27 feet; which may eventually be part of the prolongation of the Royal Canal to the Sea.

Necessarily connected with this is the improvement of the Tidal Navigation of the Moy, from the Sea to Ballina, a town daily improving in every respect, and having already a population of 10,000 inhabitants.

In reporting upon this Branch of the Navigation submitted to the consideration of Your Committee, it is considered an important object to be noticed, that the Moy, the largest River in Mayo, which passes from Lough Cullin to Ballina, through the town of Foxford, and through a rich and fertile country, could be made navigable at small expense, which would tend considerably to the general advantages of the proposed Improvements.

The *Third Part* is from the Sea at Westport Harbour to Castlebar, four miles of Canal Navigation, with a difference of level of 92 feet, to join the Lakes Navigation at Kigala. The Harbour of Westport is capable of being much improved by a small outlay of money.

The *Fourth Part*, viz. the Union of these three Navigations, comprising a Canal of three miles, from the Lakes of Castlebar to Coolodge Lake, and the improvement of the Ayle River, into Lough Mask, connecting the First and Third Parts.

And from Castlebar to Turrough, a Canal of four miles, with 65 feet difference of level, and the Improvement of the Turrough River $5\frac{1}{2}$ miles into Lough Cullin, connecting the Third and Second Parts.

The lines of these Canals, about 17 miles, uniting upwards of 80 miles of natural Navigation, are only known as far as their levels are concerned, and therefore Your Committee have not attempted to inquire into any Estimates of their probable expense; but it sufficiently appears to Your Committee that the country through which they pass is well furnished with all the necessary materials for constructing suitable works to make them efficient.

It appears by the Evidence, that these Lakes, stretching in all directions not less than 80 miles, now navigable with extreme difficulty by ordinary boats, depending on wind, are peculiarly adapted to Steam Navigation. The ordinary depth is not probably less than seven feet, and there is an ample supply of turf fuel along their borders, which would work the Steam-engines at a very moderate expense.

Your Committee consider it sufficiently proved that the country around these Lakes and Rivers, and proposed Canals, is productive of all those articles that are heavy, and the carriage of which absorbs a great part of their value, such as Corn, Potatoes, Hay, Turf, Lime, Marl, Granite, Marble, Sandstone, Limestone, Slates, Brick Earth, &c. &c.

The transport of all these articles now existing in that country at this moment costs about 6*d.* a ton per mile, which could be done by Steam Navigation

Navigation at a sixth of the expense, adding most materially to their value when exported or sent for use to the Seaports or Inland Towns, particularly from places far from the Sea.

Your Committee, relying on the case made out by the inspection of the Map annexed, and the Evidence, most strongly recommend that an immediate Survey and Soundings be made of these Lakes, and an Examination of the best Lines of their communication with the Sea at Galway, Ballina and Westport, and between those Lakes; also, Estimates of the Expense of the Canals, Improvement of the Navigations of the Lakes, by removing Obstructions and placing Beacons, and of the Improvements of the Rivers which would form parts of the general Navigation.

Your Committee cannot but believe that the comparatively small expense of making this Survey would be amply repaid by the satisfaction of the Public at knowing how far these Navigations would be found practicable and advantageous, on scientific examination.

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MINUTES OF EVIDENCE.

Veneris, 12^a die Junii, 1835.

RIGHT HON. DOMINICK BROWNE, IN THE CHAIR.

William Bald, Esq., called in; and Examined.

1. **W**HAT are you?—A civil engineer.
 2. Where do you reside?—In Dublin.

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3. Have you been engaged in many public works in Ireland?—I was first employed to make a trigonometrical survey of the county of Mayo; I was also employed by the Commissioners to inquire into the practicability of the drainage and improvement of the bogs in Ireland, of which I finished three districts west of the Shannon, embracing an extent of nearly 200,000 acres of bog soil: I was also generally employed to lay out various roads in the western district, to an extent of 250 miles; since which I have been employed by the Board of Works in Ireland to direct the execution of the Antrim Coast Road: I was also engineer to the Commissioners for building a bridge over the River Bann, in the north of Ireland; I am also at present engaged, as directing engineer, in deepening and improving the harbour and port of Drogheda; also the great road, now making under the direction of the Board of Works, extending from Kenmare, across the ridge of the Caha mountains, to Bantry Bay, which will connect the towns of Bantry and Kenmare, and also the southern and western districts of Ireland; I was also employed to report upon the practicability of making a rail-road from Limerick to Carrick-on-Suir, near Waterford; I also, last summer, designed and laid out 36 miles of a new mail-coach road, by order of the Postmaster-general, from the town of Antrim to the town of Coleraine; and I have been employed in several other public works.

4. You are well acquainted with the large lakes in Mayo and Galway?—Yes, I am. I took the levels of Lough Corrib over the sea; I also determined the levels of Lough Mask, of Lough Carra, the Loughs of Castlebar; also Lough Conn, which stretches across the province of Connaught from Galway Bay to Ballina, from south to north.

5. Do you consider that these lakes might be advantageously made navigable?—They are already navigable.

6. What is the extent, in English miles, between the sea at Galway and the sea in Killala Bay?—By taking all the separate cuts, with the lakes and rivers, I have made the length 80 British miles, including the Westport branch.

7. Could the navigation of those lakes be joined advantageously?—They could; Lough Corrib being 14 feet above the sea, and Lough Mask 50. These lakes are separated by a limestone country, two miles and three furlongs in breadth at Coog, under which the waters of Lough Mask flow to Lough Corrib by subterraneous passages, and which is peculiar to limestone countries: to connect these lakes, it would be necessary to cut through a part of the limestone isthmus which separates them, having four locks at the entrance on Lough Corrib side, which would float the boats through upon the level of the waters in Lough Mask. This single work would connect together three of the largest lakes in the west of Ireland; viz. Lough Corrib, Lough Mask, and Lough Carra, whose united area presents an atmospheric surface of 64,000 acres; a coast of nearly 200 miles, bordering on a fertile country, and giving a direct navigation into the centre of the

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province of more than 40 miles: the towns of Galway, Cong, Headford and Ballyrobe would be all connected by this single operation, which would open a wide and extensive field to steam navigation, by which all the produce of that fertile country would be cheaply and quickly sent to market, and a return or a back-carrying trade of all kinds of articles required for home consumption, such as iron, wood, salt, &c. &c.; and also for the introduction of shell-sand and coral-sand, and seaweed for the reclamation of the highly improvable districts which lie adjacent to the rivers and borders of these extensive lakes.

8. Are these lakes generally deep enough for steam navigation?—These lakes are sufficiently deep for all the purposes of steam navigation; and although they are at present with difficulty navigated by ordinary boats, depending upon wind, and particularly where horse-power cannot be applied, yet they are extremely well calculated to all the purposes of steam-boat navigation; and along the borders of the lakes and rivers are extensive bogs; turf fuel can therefore be procured in abundance, and cheap, to work the steam-engines to any extent that may be required. But it would be a most desirable object to have them sounded, and the channels of navigation marked, and the sunken rocks or reefs beacons: it would also be most useful to obtain the area of each lake within its summer limit when the waters are low, and also the area within the winter or flood line, *i.e.* the summer and winter basins, and the summer and winter levels of their waters, so that the quantity of ground subject to flood might be known; also its present value, so that perhaps some plan might be devised for rendering those lands more productive than they are at present; or how far it might be carried into execution, or found practicable, having the waters under full government or command, to irrigate to a greater extent, and to a higher level, the low grounds which lie adjacent to the rivers which discharge themselves into these lakes and along their borders; also how long the waters generally lie on the low lands.

9. Have you proposed to connect Lough Corrib with the sea?—I did not touch upon that; I have merely mentioned that Lough Corrib, being 14 feet above the sea, it would be a very easy matter to connect it with the harbour or bay of Galway; a plan has already been in progress for doing so.

10. That has been surveyed by other persons?—It has.

11. Will you state your opinion to the Committee as to the connexion of Lough Corrib with the sea?—I am not able to point out the exact line of the canal, as there may be two, which would require separate and distinct examinations.

12. State your general views?—Having taken the levels from the sea along the river of Galway to Lough Corrib, it appeared to me to be an easy and a simple operation to connect the waters of that interior basin with the ocean.

13. You have not looked to any particular lines by which you think this would be advisable?—No, no particular lines, except the line along the borders of the river flowing from the lake to the sea.

14. But it is a measure, you think, that might be very easily effected, and productive of great advantages?—Unquestionably, of the greatest public utility.

15. The advantage you mention, as likely to occur from connecting the navigation of the lakes, would be extended to the town of Galway, by connecting Lough Corrib with the sea?—Unquestionably.

16. Is there any disadvantage in having a canal pass through a town?—The passage of boats along a canal, which traverse or cross public streets in a town, must meet with interruption by the passing of carriages and carts, but that might be partly obviated by doing as the Dutch do in Amsterdam, and in the various towns of Holland, by having simple bridges, opening with a series of short timber shuttles; the rigging of the masts are loosened and they pass through very narrow openings in the top of the bridges, not more than a yard wide, through which the mast passes; but the bridges under are sufficiently wide to permit the vessels that traffic on the canals to go through.

17. How do you propose that the navigation shall be prolonged from Lough Mask to Lough Carra?—These lakes are already connected, and on the same level nearly. There are two lines, one through Lough Carra and another by the river Ayle.

18. From Lough Mask?—From Lough Mask to Coolodge Lake, by the Ayle River, which might be improved by a little deepening, as Coolodge Lake is only 14 feet higher than Lough Mask (64 feet above the sea), two double locks, or four single ones, would join the Loughs of Castlebar, which are 92 feet above the sea, the distance across from Coolodge Lake being three miles. The Lakes of Castlebar,

bar, when all connected, will embrace a surface of 1,500 acres; they are 22 in number, and would form the summit level between Galway Bay, Westport Bay, Ballina and Killala Bays; the Loughs of Castlebar extend in the direction of Westport, and, by some cutting at Kigula Lake, they might be all connected, and a lake navigation of nearly seven miles would be then obtained on one level, and which might be extended upon the same level to within a very short distance of the town of Westport, and might also be carried down to Westport Bay or Harbour, by locks. The summit level, going in the other direction towards Killala Bay, might be carried from Castlebar towards Lough Conn, to a distance of four miles; there would then be a summit level 16½ miles in length, fed by 22 lakes, containing 1,500 acres, as before mentioned. But in addition, the whole waters of the large river of Clydagh, and additional numerous lakes lying in the Barney-na-Gee mountains, might be added to the supply of the summit level, so that there would be more than an ample supply of water on the summit to answer all the purposes of trade, however extended it might hereafter become; and also for the purposes of machinery, if found necessary. Three double locks at Turlough would meet nearly the level of the waters of Lough Conn, which are 27 feet above the sea. At Turlough, the river might be deepened and straightened in its course to Lough Collin, or by a separate and distinct canal, whichever would be found best; the distance along the river would be about five and a half miles from Turlough to Lough Cullin, which is an arm of Lough Conn; Lough Conn and Lough Cullin contain an area of 14,000 acres, 11 miles long, and a coast of 53 miles, bordering in many parts upon a most fruitful and productive country. From Lough Conn to Ballina the country is very flat and level, and the distance is three miles five furlongs. I would recommend a cut or canal to be made to Ballina, upon the same level as the waters of Lough Conn, with a regulating lock at the lake; indeed, several of the lakes will require regulating locks; and this navigation could be joined to the sea at Ballina by three locks, and a quantity of water could be obtained from Lough Conn, which would be equal to half the power of all the steam engines in the city of Glasgow.

19. What is the extent of the canal that will be necessary for this?—From Lough Corrib to Lough Mask, two and a half miles; from Coolodge Lake to Castlebar Lakes, or from Lough Carra to the same point, three miles; from Castlebar to Westport, about four miles. The lakes of Castlebar extend more than half the distance; Castlebar to Turlough, four miles; Lough Conn to Ballina, three and a half miles; total, 17 miles, exclusive of the canal from Lough Corrib to the sea at Galway.

20. Are you speaking of English miles?—Nothing but English measure in every instance.

21. Have you taken the levels?—I have. When I was engaged in the survey for the drainage and improvement of the bogs of Ireland, I carried a series of levels from Galway Bay to Lough Corrib, Lough Mask and Carra, and across to the Lakes of Castlebar; also from Westport Bay to the lakes of Castlebar, and from Lough Conn to Turlough and to the lakes of Castlebar, joining the three series together.

Lanz, 15^{te} die Junii, 1835.

RIGHT HON. DOMINICK BROWNE, IN THE CHAIR.

William Bald, Esq., called in; and further Examined.

22. WILL you proceed with the statement you were making to the Committee at its last meeting?—I believe I finished the statement or description of the river, canal and lake navigation from Galway Bay to Killala Bay, by Loughs Corrib, Mask, Carra, Coolodge, Lakes of Castlebar, Lough Cullin, Lough Conn, and to Ballina and the sea at Killala Bay. This navigation would connect the towns of Ballina, Foxford, Westport, Castlebar, Ballinrobe, Headford, Cong and Galway; and would pass through a country possessing a population of not less than 800,000 inhabitants,

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bitants, more than all the population of the districts which were traversed by the Caledonian Canal in Scotland. The districts of the Highlands are mountainous and hilly, and by no means to be compared to the low, rich and improvable districts which this lake, river and canal navigation would open up.

23. What would be the average expense of the locks on this canal you propose?—Without making out sections and detailed estimates, it would be difficult for me to say exactly.

24. Would it be 1,000 £ a lock?—I should think it would be more.

25. Would it be 1,500 £?—Not less than 1,500 £ a lock.

26. Not less perhaps than 2,000 £?—It would not be under 1,500 £, as the navigation would be carried on by steamers; but there is an abundance of most excellent materials fit for any kind of engineering works that might require to be constructed.

27. What do you conceive the locks on the Caledonian Canal to be?—Some of them cost not less than 20,000 £; some of them are 180 feet long, 40 feet wide, and eight feet rise, with 20 feet depth of water.

28. What kind of coast is Mayo and Galway?—The sea shore embraced between Galway on the south, where this lake and river navigation would commence, to Killala Bay, where it would end, on the north, includes many hundred miles of coast, including isles which this inland navigation would possess on its Atlantic frontier, and in which are situated numerous harbours, many of them safe and commodious to all classes of trading ships.

29. How many miles would the direct course of a ship be?—If the wind was even fair, and her course direct the whole way, the distance is not less than 190 miles.

30. How many harbours are there from Galway Bay to Killala Bay, fit for shipping?—

Broadhaven Harbour.	Ballinakill Harbour.
Blacksod ditto.	Innishbofin Harbour, fit for vessels drawing 10 feet.
Tullaghan ditto.	Claggan Bay.
Ioish Kea ditto, in moderate weather.	Streamstown Bay.
Clare Island ditto, ditto.	Innisturk Sound.
Achill Hole ditto.	Ardbear, or Clifden.
Roe Island ditto.	Bunowen, only for moderate weather.
Inish Goula ditto, three to five fathoms of water.	Birterbuy, an excellent harbour.
Inish Gort Harbour.	Cruagh Isles.
Dore Inish ditto.	Ardbay.
Westport ditto.	Roondstone.
Newport ditto.	Casheen and
Innisturk ditto, Clew Bay.	Kilkerran Bays.
Innisturk Island, but not sufficiently sheltered, being an open bay; depth of water from two to five fathoms.	Greatman's Bay.
Killery Harbour.	Costello Bay.
	Conus Bay.

31. Will this canal open much up?—This canal of 17 miles, (not including the canal from Galway to the sea,) will connect and open a lake and river navigation of 60 miles in length, with an extent of lake shores amounting to more than 250 miles, and a surface of inland waters to the extent of not less than 80,000 acres.

32. Do you not think this navigation may be divided into four parts advantageously?—I do.

33. Which do you think is the most material?—The most material, or what would be attended with the greatest public benefit or effect, would be that from the sea to Lough Corrib, Lough Mask and Lough Carra, which would open at once a navigation into the interior of more than 40 miles, and that could be accomplished by two canals, one at Galway the other at Cong.

34. Which do you think is the second in importance?—Lough Conn to Ballina.

35. And its communication to the sea?—Yes, at Ballina, and to be made navigable from Lough Cullen along the river as far as Turlough, which river is flooded in winter to above the bridge of Kilnacarra by the waters of Lough Cullen; this would open up a valuable navigation into the interior fertile country of nearly 20 miles, by a canal of about three and a half miles, taken from Lough Conn to Ballina and the sea.

36. What do you consider the third?—The third would be from Castlebar towards

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towards Westport, by the lakes of Castlebar, which would connect the principal county towns, and the fertile productive country behind it, with Westport Harbour in Clew Bay.

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37. Have you prepared any estimate of the expense of the whole?—No; the whole line would require to be re-levelled from Galway Bay to Killala Bay, lakes sounded, maps and plans drawn, and estimates then founded on them.

38. How many miles would there be of that canal?—About 17 miles, which does not include from Galway to the sea, and 60 miles of lake and river navigation besides.

39. What is the fourth division, in point of value of communication?—It is the connexion of these navigations across from the Loughs of Castlebar to the Ayle River, which flows into Lough Mask, or to Lough Corra.

40. And of course from Castlebar to Turlough?—Yes.

41. What class of vessels can now sail up to Ballina?—No vessels sail up to Ballina, because the bed of the Moy River is barred across by a ridge of limestone strata, about half a mile below the town; but vessels of about 90 tons burden, and not drawing more than 12 feet of water, can sail up to a small quay situated on the Sigo side of the Moy River, and is about one mile below Ballina. I think it would be extremely advantageous to the trade of this rising country, that ships should be enabled to sail up to the natural basin situated in the Moy, and which is at the bridge of Ballina. But it would be also above all very desirable to improve a portion of the channel of the lower part of the Moy River navigation, between the Pool and the end of Bertra Island: I do not know of any tidal river navigation in Ireland, where so much improvement could be effected at so moderate an expense, and be attended with so much benefit.

42. What is the largest vessel which would be able to trade on the proposed improved navigation of the Moy River?—I should suppose vessels drawing about 12 feet of water would be the largest.

43. How many tons?—About from 100 to 150 tons.

44. Would the Ballina or Moy River admit the navigation of a steam-boat of 40 tons burden?—Yes, and more, but not up to Ballina. I know of nothing that would be more beneficial to the whole of the country than to improve the tidal navigation of the Moy River at Ballina, so as to admit trading steamers from Glasgow and Liverpool.

45. Could a very large vessel reach Killala?—There is a bar at the entrance of the harbour, on which there is four feet of water only at low-water spring tides.

46. What is the largest class of vessels that come into Killala Bay now?—Ships of about 180 tons; but it depends very much on the state of the weather and the run of the sea, on account of the breakers on the bar; if it be moderate weather they can easily enter, but if it is rough it is difficult: it is very open to the north and north-west, which is sometimes a prevalent wind on that coast.

47. What is the water they want for the largest vessel?—I think the general draught of trading vessels on that coast, is about 12 feet.

48. Do you expect that this navigation would enable vessels trading to London to approach Killala Bay?—If the river navigation of the Moy below Ballina was improved, it would give much facility to all kinds of intercourse; but I beg to observe, that the Moy at Ballina and Killala Harbour are distinct ports. But this improvement would be of considerable public advantage to trading vessels in reaching Ballina, and which joins the proposed interior lake and river navigation at that town.

49. Is there not at this moment a very considerable export trade from Ballina to Liverpool and Glasgow?—Yes, a very considerable one.

50. Would that be increased?—Most unquestionably, by the improvement of the harbour.

51. Would it not also be improved by this excellent proposed interior lake and river navigation?—No doubt it would, extremely so.

52. Is there not also a considerable export trade from Westport?—There is a very considerable export trade from Westport.

53. To where, chiefly?—To Liverpool and Glasgow.

54. Are you aware of the great difficulties of communication between the interior of the country to those ports at this moment; the great expense of land carriage?—Yes, I am perfectly aware of it.

55. Are you not satisfied that an inland water communication would be extremely advantageous in conveying such bulky articles as corn to the seaports?—It would.

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56. Proceed with your statement generally as to these proposed navigations?—I have finished my statement in that line of country.

57-62. Do you not think that a map of these lakes would tend to show the advantage of a navigation more than any evidence in any other way?—Yes; distinct and accurate maps and charts, showing the depth of water in each lake, with the rocks, isles, and channels of navigation, would be very important and useful; also sections of the ground between the lakes, and also plans and sections of the rivers proposed to be improved, by deepening and widening; and the summer and winter levels of all the lakes and rivers, with the nature of the strata on the sides and bottom of them.

63. Do you know from memory how much higher is Lough Carra than Lough Mask?—It is nearly on the same level as Lough Mask, but in dry summers about six inches difference, and Lough Mask is 36 feet above Lough Corrib; Lough Mask is 50 feet above the sea, and Lough Corrib is 14 feet above the sea. The difference is 36 feet.

64. Do you know what is the general depth of water in Lough Mask?—I have never sounded Lough Mask.

65. Do you not know it is navigable almost throughout by boats?—I do know that Lough Mask is sufficiently deep for all the purposes of navigation; I am aware of it.

66. Are you aware that Lough Carra is generally navigable?—Yes, I am.

67. But both of these lakes are full of rocks, and dangerous?—Not to navigation, if beacons, as I have already mentioned.

68. The rocks and dangerous places require to be marked?—Yes; I have given that in my evidence particularly.

Mr. Alexander Nimmo, called in; and Examined.

*Mr.
Alexander Nimmo.*

69. ARE you acquainted with Lough Corrib?—Yes, a good deal acquainted with it.

70. It is very generally navigable, is it not?—It is navigable throughout the whole extent, 30 miles, from the sea at Galway.

71. How many English?—Forty-two English miles.

72. You are personally acquainted with the great part of the navigation?—Yes, particularly with the upper part.

73. State the part you are acquainted with?—I am better acquainted with the river at Maum; I am acquainted from Cong to the mountains of Joyce's country; I have been obliged to carry the stones of Maum Bridge by that means.

74. What size boats did you use?—Fourteen-ton boats, drawing between three and four feet water.

75. There is six feet water generally through the lake from Menlo to Cong, and Cong to Maum?—Yes, more than six feet of water, for boats drawing four feet of water could scarcely navigate in six feet in a swell, which sometimes occurs on this loagh, with high winds.

76. There are many dangerous places, shoals and rocks, which require to be removed to make the navigation fit for steam-boats?—There are only two of great importance, Balack and Newcastle.

77. Where are they situated?—One is four miles up the lake, four miles up from Galway.

78. Where is the other?—At Newcastle, at the town of Galway.

79. There is a considerable fall at Menlo?—It is not a very considerable fall at Menlo; it is navigable all the year round for boats drawing three feet.

80. What is the general aspect of the country adjoining Lough Corrib; what is the general nature of the country?—Near the shores of Lough Corrib there is a great deal of bog and limestone country, sometimes very rough.

81. Would it not be very advantageous for the shores of Lough Corrib, to have the facility of having sea-weed brought up from the bay of Galway, without being taken out of one boat and put into another?—Of great advantage, and a great saving of expense in the trans-shipment and portage; and the boats from Roundstone and other bays could come down the shore, and be loaded into the lake with their freight; they are generally boats of 10 tons burden, not drawing more than four feet; they could at once be sent to the upper part of the lake.

82. Would it not be very advantageous to the town of Galway to have the facility of procuring limestone and turf from the shores of Lough Corrib?—They

are

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are at present supplied, in a great measure, with limestone and turf from the shores of Lough Corrib; but if the navigation was improved, and better known, the limestone could be sent down cheaper, and to the upper part of the lake, where it is in great demand.

83. Would not the other matters of agricultural produce come along that navigation much more conveniently than at present?—If the navigation was improved, the quantity of manure drawn from the sea shore to the agriculturists of the country would be increased, and so would the produce.

84. Would it not come down the lakes in more quantity than at present, and facilitate the sale of the productions of the agriculturists of the country?—No doubt it would.

85. Previously to the introduction of steam navigation, do not you think it would be necessary to improve the navigation of that lake?—Decidedly. If a good survey was made of it, I have no doubt steamers would be put on it at once. A company was formed some time ago to navigate that lake by steam-boats, but found it very difficult to do so, on account of the want of knowledge of the lake.

86. Do you not consider a steam-boat or a tug-boat could draw down to Galway a great number of boats, with the different sorts of the produce of the shores of the lake, which at this moment get down with great difficulty through the uncertainty of the winds?—No doubt; the boats used on this lake are only capable of going before the wind; they are generally managed by two men, who, when a strong gale comes against them, cannot move at all. I have seen them stopped a fortnight in one place with a head-wind, and the poor fellows had nothing for their trip, being obliged to spend the freight.

87. You consider the lake as peculiarly adapted for steam navigation?—It is very well adapted for it.

88. Is there anything further occurs to you, as to the lakes, that you wish to mention to the Committee?—Yes. The improvement of this fine navigation, which, as I have said, extends about 40 English miles along a very fine corn country, into the heart of our highest mountains, and into one of our best sea-port towns, deserves more attention than it has yet received. A good chart, with soundings and sailing directions, should be published; the rocks and shoals beacons and cleared, which could be done at little expense, the canal being now in progress of making from the sea. The lake occupies 30,000 Irish acres, and contains about 1,000 acres of the finest land on its islets. If such a navigation as this was in the United States of America, ere this you would have seen steamers plying about in all directions, carrying to the sea the produce of the land, and returning with goods to the various towns that would have risen on its banks.

Jovis, 18th die Junii, 1835.

RIGHT HON. DOMINICK BROWNE, IN THE CHAIR.

William Bald, Esq., called in; and further Examined.

89. THERE is another line of communication from Lough Cullin to the sea, besides that proposed through Lough Conn?—Yes; there is a line that might be taken from Lough Cullin to the town of Foxford: there is a fall at Foxford of the Moy River, which is considerable; afterwards there is an immense flat and winter-flooded basin, down towards Ballina. It might be worthy of an examination, in the event of any survey being made of that country, so as to form a navigation through it. From the fall below Foxford along the Moy to a distance of 10 miles, to the high-water line of the sea at Ballina Bridge, there might probably be a fall found of about 18 feet. But, however, it may be necessary to observe, that a considerable portion of the country on both borders of the River Moy, between Foxford and Ballina, is subject to inundation during the winter season; I should

William Bald, Esq.

13 June 1835.

William Reid, Esq.

18 June 1835.

therefore beg leave to suggest, that when an examination would be made of the flooded basin of the Moy River, between Foxford and Ballina, that a report should be made out at the same time, showing how far the country could be drained and the lands rendered more valuable, either by lowering the level of the winter-flood waters, or embanking the lands subject to it, combined with the navigation, or by a series of dams and sluices at the points of government on the river, giving full power and command of water to irrigate to a higher level and to a greater extent of country.

90. Do you know the line of country through which the direction of the Royal Canal takes westward?—I do; I have been at Tarron Barry.

91. Has the possibility ever occurred to you of carrying on an extension of that canal through the counties of Roscommon and Mayo?—It has.

92. Would you mention the line you think most desirable it should pass through that part of the country?—There are two lines present themselves: one by the Upper Shannon, by Carrick, Lough Key, and to Lough Garra; the other is from the Carnado Water, through the country by Elphin into Lough Balla, thence to Lough Garra along the Lung, then in a southern direction to near the lakes of Urraar, the town of Kilkelly southwards of Swinford, then along the vale of the Guishaden and Moy to the town of Foxford.

93. What would be the summit level of that line of canal?—About 290 feet above the sea.

94. What is the distance between Lough Garra and Lough Conn?—It is about 30 miles from Lough Garra to Foxford on the Moy, which joins the navigation already described, descending towards Ballina; but from the navigable part of the Lung River to Lough Callia, about 26 miles.

95. And what is the highest summit level of the country upon that line?—About 290 feet.

96. What is the distance of Lough Balla to the Shannon, where the navigation of the river ends?—It is about 17 miles, and to Lough Garra three miles.

97. How many locks would it take to lock up 200 feet?—Twenty-five locks, with a rise of eight feet to each lock; but that depends upon the situation of the ground and the supply of water.

98. Do you consider the line you have just described as one likely, for the benefit of the country, to be carried into effect?—I do; when I first viewed the country and directed the levels to be taken over it, it appeared to me that an extension of the Royal Canal would be at some time carried across that country into the Moy Basin, and that it would be of the greatest public utility to the whole of that great and fertile district of country.

99. Should it not be taken into consideration, in the survey of these loughs, the navigation of the rivers flowing into them?—I should think it desirable that the rivers flowing into Lough Mask, Lough Corrib and Lough Conn, should be surveyed as far as they are navigable, particularly the rivers of Berlanabrick, Clare Galway River, the Black River, the Robe, the Deal River, the Curragh, the Oughterard, to Lough Garra, &c.

100. Now the communication between Castlebar and the shortest mode to the sea, you have said to be to Westport; do you conceive that any communication might be made also with Newport from Castlebar?—From the west end of the lakes of Castlebar, I conceive it would be a very desirable object, at all events, to examine the country to Newport, to see how far it would be practicable to extend the navigation to that town, or to connect it by a small railway.

101. What kind of harbour is there at Newport?—The harbour of Newport is a very good harbour, fit for ships drawing 12 feet of water, and open out to Clew Bay, without being beset with any shoals or rocks. Newport is considered a good and safe harbour for trading vessels, and there is a very considerable export trade in corn from that town to Liverpool and Glasgow. Above Newport is situated a very large lake, called Lough Beltra, elevated above the sea 40 feet; it contains an area of about 1,000 acres, and is fed by numerous rivers and a catchment country or basin, containing about 50 square miles, or 32,000 acres; this great water power will one day become of much value, from its contiguity to the harbour of Newport. From Newport along the river to Lough Beltra is five miles; Lough Beltra is something more than two miles long, and from Lough Beltra, by Lough Layalla, to Lough Conn, is very little more than six miles; the summit level between Lough Beltra and Lough Conn is about 142 feet above the sea, Lough Conn is 27 feet above the sea, and Lough Beltra about 40 feet above the sea.

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William Bald, Esq.

18 June 1835.

If the waters of Lough Beltra could, on the same level, be carried to Newport, there would then be one water level, including Lough Beltra, of seven miles in length; and if a small railway was made from Lough Beltra over to Lough Conn, there would then be a direct communication opened to Ballina, extending from New Bay to Killala Bay.

Mr. Alexander Nimmo, called in; and further Examined.

Mr.
Alexander Nimmo.

102. HAVE you any knowledge of this country between Lough Corrib and Lough Mask?—Yes; I have been a good deal employed in the construction of roads for the Government in that district.

103. Did you lay out a road from Fairhill to Earlsport, in Lough Corrib?—Yes, I laid out a short line of road from Fairhill to Earlsport, for Lord Leitrim.

104. Is there not an extensive corn market at Fairhill?—There is a very considerable corn market at Fairhill, but I am not aware of the extent.

105. Is Earlsport a good site for a secure harbour, and would you recommend a quay to be built for exporting corn to the port of Galway?—Earlsport is naturally a good harbour, and with the expenditure of about 100*l.* on a small landing quay, the bight would become of great use, in case of steamers being established on the lough.

106. Would it be of any use without steamers to other ports?—Yes, it would.

107. Are you aware that the lake is only one mile and a half from Fairhill, and that most of the corn brought there is sent to Westport by a land carriage of 25 miles?—I am aware that most of the corn on that side of the lake goes to Westport, and in many cases it is carried 10 or 12 miles along the shore of the lake, and then sent to Westport. If some small quays were built, and steam-boats established, I have no doubt that all the corn would go by the lake, and that the waste lands on the shores would soon be improved, and the corn trade increased.

108. Do you think, if small quays were built and steam-boats established, a man would soon spring up on the upper part of the lake?—I have not the least doubt of it. A question would arise as to which would be the best site for a town on this part of the lake; Maam has many advantages, being partly established and having the roads made; there is no doubt that the travelling to Westport would pass by it, and when steamers run on the lake, this would become the route from Westport to Galway. A good site could be found on Mr. St. George's property at the foot of Lackaverry Hill, opposite Castle Kirk Island; from this point a good navigation could be formed, extending, in various branches, 10 or 12 miles, at little expense, if carried to the sea at Screeb, on the coast road, at the head of Comas Bay.

109. Where is Comas Bay?—It is on the coast of Galway.

110. Do you mean from Lough Corrib to Galway Bay?—Yes; the cut to be made is partly navigable by means of the lake and down the rivers.

111. Down what river?—Down Screeb River to Lough Ellen, and Shindela Lake to the Half-way House, which commands 20 miles of inland lake coast.

112. Have you considered what would be the best mode of making a navigation between Lough Mask and Lough Corrib?—I have not particularly examined the country with that view; I should think an open cut to Lough Mask is the best possible way of doing it, even if it is to be a canal navigation; but in America they are very much accustomed to portage between their lakes, that is, they have a short railway between two lakes; they land the passengers from the steam-boat of one lake on the railway, and re-ship on the other lake, without any inconvenience.

113. What is the height of the ground between Lough Corrib and Lough Mask?—I should think not 100 feet; the water of Lough Mask very frequently flows near the town of Cong.

114. Then you do not conceive a tunnel can by possibility be necessary?—I do not think a tunnel would be necessary.

115. Does the water ever go over land from Lough Mask to Lough Corrib?—It does not go over exactly all the way, but it comes near it: it is a limestone country; there is much broken ground.

Martis, 25^o die Junii, 1835.

RIGHT HON. DOMINICK BROWNE, IN THE CHAIR.

William Bald, Esq. called in; and further Examined.

William Bald, Esq.

23 June 1835.

116. CAN you give the Committee any information relative to the navigation of the Moy?—I have already reported upon the navigation of the Moy river from Lough Conn by Foxford, to the sea at Ballina. In proceeding inland by the Moy river towards the bridge of Ballylahan from Lough Callie, a distance of about three miles, there is a rise of only seven feet; and from the bridge of Ballylahan to the junction of the Goosaden river with the Moy river, there is a rise of only 14 feet. In less than half a mile above that, along the Moy, there is a rise of 12 feet. I am not aware at present that I am in possession of any levels of the Moy river higher up; there is a rise of 36 feet above the level of the surface water in Lough Conn, in a distance of about five miles and a quarter.

117. Has Ballina been very much increasing within the last few years?—Extremely so; I believe that the population of it has nearly doubled within these 20 years.

118. What do you suppose the population to be now?—I should suppose about 10,000 inhabitants.

119. Do you consider that it is of material importance that the navigation between Ballina and the sea should be completed?—I do think it of the first importance that the Moy should be improved as far as possible for the trading vessels visiting that port.

120. Has not Ballina and Killala Bay very superior advantages for commercial intercourse with Liverpool and Glasgow?—Yes, considerable facilities, and it present a very extensive trade is carried on both with Liverpool and Glasgow.

121. Have you read Mr. Alexander Clendenning's evidence before the Committee of Agriculture of 1833, in which he states that it costs 10*s.* a ton conveying corn 20 miles, from the inland country to the seaport?—Yes.

122. Do you not consider that that expense would be materially lessened by water carriage?—By water carriage I should think that it ought to be carried for less than 1*d.* a ton per mile.

123. That would be 20*d.* instead of 10*s.*?—Precisely so.

124. Suppose this navigable communication between Lough Conn and the sea was effected, which way would you think it most desirable to connect Castlebar with the sea, through Lough Conn or through Lough Castlebar?—I should think that as Westport Harbour is deeply embayed, and the west and south-westerly gales prevail upon that coast, and as a ship has to beat against the wind not less than 30 miles seaward to get round Achil Head, if she proceeds either to the port of Glasgow in the Clyde, or to Liverpool by the north channel; or if she proceeds southward, by Slieve Head, to reach the southern channel for either Bristol or London: I should think, under these circumstances, that I would prefer sending corn down by the natural navigation of the Turlough River and Lough Conn to the port of Ballina, because there is facility for a ship to sail from Killala Bay, both from the position and also the prevailing winds on that coast, to reach the Clyde or Liverpool easier than round Achil Head.

125. Would you conceive there is greater facility for sending grain from Castlebar to the sea at Westport, or to the sea at Ballina?—Decidedly to Westport, because the distance is much shorter.

126. How do you suppose the proceeds of the country would be exported, in the event of these three lines being made navigable?—The greatest export will be naturally by Lough Carra, Lough Mask and Lough Corrib, to Galway; the second will be by the river of Turlough to Lough Conn and Ballina; the third, by Castlebar, through the lakes of Castlebar, to Westport at the sea. The trade of the country will divide itself into three branches; the greatest to Galway, the second to Ballina, and the third to Westport.

Lune, 29^e die Junii, 1835.

RIGHT HON. DOMINICK BROWNE, IN THE CHAIR.

William Bald, Esq., called in; and further Examined.

127. HAVE you any additional statement to make to the Committee?—There are very extensive quarries of very fine, beautiful black marble situated at the edges of Lough Corrib, near Galway; at Cong, close to the proposed navigation, are quarries of grey limestone, perhaps the best in Ireland; single blocks can be procured there to any size, even 40 feet long and three feet square, perfectly sound; indeed the large blocks there, when struck with a hammer, ring like a bell, announcing neither fracture nor fissure. At Turlough, in Mayo, close to the line of the proposed canal, are large and splendid beds of black marble, which take a high polish, and extremely well suited to many useful as well as ornamental purposes. On the borders of Lough Collin and Lough Conn, and all round the Puntoon on both sides of the lakes, and also at Foxford, are immense quantities of dark grey and light coloured granite, containing a small portion of mica; this rock is highly crystallized and extremely hard, capable of taking a high polish. This granite would be invaluable for the construction of light-houses and bridges, &c., and also for monuments destined to commemorate great events, because it is extremely sound, of a most durable nature, and admirably adapted for such purposes. On the sides and along the edges of Lough Conn are to be found quarries of sandstone, most valuable as a building material; and also sandstone flags, an article always in much demand in towns; there are also quarries of secondary limestone on the borders of Lough Conn. In the interior districts are to be found an abundance of brick clay and marl, and there are also large beds of pipe clay. All these valuable productions of the country would be opened up and wrought to a very great extent, whereby a numerous body of labouring men would be most usefully and beneficially employed, not only to themselves but also to the whole country; and there can be no doubt but various branches of new trade and traffic would be created, in working out and procuring these valuable materials, if the lake and river navigation were but once opened; indeed all those productions are at present locked in and entombed for the want of a cheap mode of conveyance to the respective markets on the coast, and also to the interior towns. If this lake and river navigation were opened, a valuable remunerating trade would spring up, in addition to the very extensive one which would immediately take place in the transport of all the agricultural produce from the interior to the seaports situated on the coast.

William Gold, Esq.

29 June 1835.

It would be most desirable to connect either Lough Mask or Lough Corrib with the Killery Harbour, if practicable, either by water or a railway, because it would open and connect the lake and river navigation with the valuable slate quarries which are situated at the head and along the sides of this harbour. The slates of the Killeries are of as good a quality as any to be found in Ireland; and these valuable and useful quarries are at present lying unwrought, in the middle of an unemployed population, because there is not at present any communication between them and the interior towns of Ireland, to send out the produce to market.

I have in my evidence already given to the Committee on Public Works for Ireland the fact of the *Lady Dunally* steam-boat, on the Shannon, going 30 miles per day, consuming 30 boxes of turf fuel, at 4 d. per box, which is at the rate of 4 d. per mile for propelling the vessel. The Steam Company of the Shannon River deserve the highest praise for this application of turf fuel, the production of the country, in preference to that of coal, in working the steam engine; and although the application of turf fuel in working a steam engine be not in this case new, yet it is very important to Ireland to see it practically applied to so useful a purpose; because, it is to be hoped, that all the engines on board of the steam-boats

William Bald, Esq.

29 June 1836.

navigating the lakes and rivers of Ireland will be worked by turf fuel alone, and which will give useful employment to the labouring population, and be the means of draining and improving the extensive bogs which lie adjacent to those lake and river navigations.

A small steamer might draw along the lakes of Carra, Mask and Corrib, four boats, each carrying 50 tons, to a distance of 40 miles per day; the cost of fuel might be about 13s., which would be less than 1d. a ton for 40 miles; and if the wind was favourable, this expense might even be entirely saved by wind power.

128. Would it not be advantageous to have on the map annexed to this Report a sketch of the proposed line of the Grand Canal from Ballinasloe to Galway, and towards Tuam?—Yes, it would; and I will insert the same on the map.

Veneris, 3^a die Julii, 1835.

RIGHT HON. DOMINICK BROWNE, IN THE CHAIR.

William Bald, Esq., called in; and further Examined.

William Bald, Esq.

3 July 1835.

129. HAVE you formed any estimate of the expense of making the surveys, plans and estimates for those branches of navigable communication to which the Committee has directed its attention, omitting those parts which will necessarily be included in the Ordnance survey of Ireland?—Yes, I have, as follows:

	£.	s.	d.
1. Plans and sections of the ground between Lough Corrib and Lough Mask, with estimates in detail of the works to be constructed, two miles and a half	75	-	-
2. Plans and sections for deepening, widening and improving the navigation of the Ayle River, from Lough Mask to Coolodge Lake, seven miles and a half, with estimates in detail	195	-	-
3. Plans and sections of proposed canal across from Coolodge, Lough Lake to Castlebar Lake, three miles, with estimates in detail	75	-	-
4. Plans and sections of canal navigation from Castlebar Lakes to the sea: this will require at least seven miles to be examined and measured; with detailed estimates	210	-	-
5. Plans and sections of canal navigation from Castlebar to Turlough, and along the Turlough River to Lough Cullin, distance about nine miles and a half, with detailed estimates	247	-	-
6. Plans and estimates of proposed canal from Lough Conn to the sea at Ballina, three miles and a half	105	-	-
7. Plans and sections of the Moy River from Lough Cullin to Foxford, and from Foxford to the sea at Ballina, with plans and detailed estimates, fourteen miles	564	-	-
For 52 miles	1,271	-	-

But the lakes and rivers are to be surveyed by the Ordnance officers, and the sounding of the lakes are to be done by the Admiralty, whose officers have finished the sounding of Lough Neagh.

REPORT
FROM THE
SELECT COMMITTEE
ON
CONNAUGHT LAKES;
WITH THE
MINUTES OF EVIDENCE.

Ordered, by The House of Commons, to be Printed,
3 July 1835.
